

WHAT IS CLAIMED IS:

1. A nucleic acid that encodes a non-aggregating chromo- or fluorescent mutant of an aggregating Cnidarian chromo- or fluorescent protein or mutant thereof.

5 2. The nucleic acid according to Claim 1, wherein said Cnidarian chromo- or fluorescent protein is from a non-bioluminescent Cnidarian species.

10 3. The nucleic acid according to Claim 2, wherein said non-bioluminescent Cnidarian species is an Anthozoan species.

4. A nucleic acid according to Claim 1, wherein said nucleic acid has a sequence of residues that is substantially the same as or identical to a nucleotide sequence of at least 10 residues in length of SEQ ID NOS:14; 15; 17; 19; 21; and 23.

15 5. A fragment of the nucleic acid selected according to Claim 1.

6. A construct comprising a vector and a nucleic acid according to Claim 1.

20 7. An expression cassette comprising:

- (a) a transcriptional initiation region functional in an expression host;
- (b) a nucleic acid according to Claim 1; and
- (c) and a transcriptional termination region functional in said expression host.

25 8. A cell, or the progeny thereof, comprising an expression cassette according to Claim 7 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.

30 9. A method of producing a chromo and/or fluorescent protein, said method comprising:

growing a cell according to Claim 8, whereby said protein is expressed; and isolating said protein substantially free of other proteins.

35 10. A protein or fragment thereof encoded by a nucleic acid according to Claim 1.

11. An antibody binding specifically to a protein according to Claim 10.

12. A transgenic cell or the progeny thereof comprising a transgene that is a nucleic acid according to Claim 1.

13. A transgenic organism comprising a transgene that is a nucleic acid according to
Claim 1.

5 14. In an application that employs a chromo- or fluorescent protein, the improvement
comprising:
employing a protein according to Claim 10.

10 15. In an application that employs a nucleic acid encoding a chromo- or fluorescent
protein, the improvement comprising:
employing a nucleic acid according to Claim 1.

16. A kit comprising a nucleic acid according to Claim 1.

15 17. A method of producing a nucleic acid according to Claim 1, said method
comprising:
modulating at least one N-terminal residue codon of an aggregating Cnidarian
chromo and/or fluorescent protein encoding sequence to produce said nucleic acid.

20 18. The method according to Claim 17, wherein said at least one residue is a basic
residue.

19. The method according to Claim 18, wherein said modulation is a substitution of
said basic residue for a neutral residue.

25 20. The method according to Claim 18, wherein said basic residue is lys or arg.